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M. K. TEACH
TILTABLE MERCHANDISE SUPPORTING MEANS
FOR STORE-EMPLOYED DISPLAY

2,648,583

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2 Sheets-Sheet 1

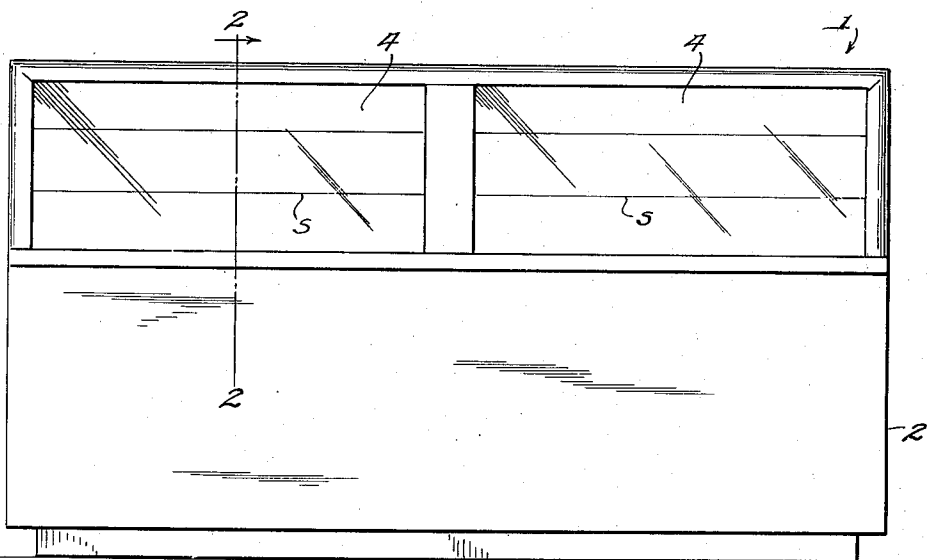


FIG. 1

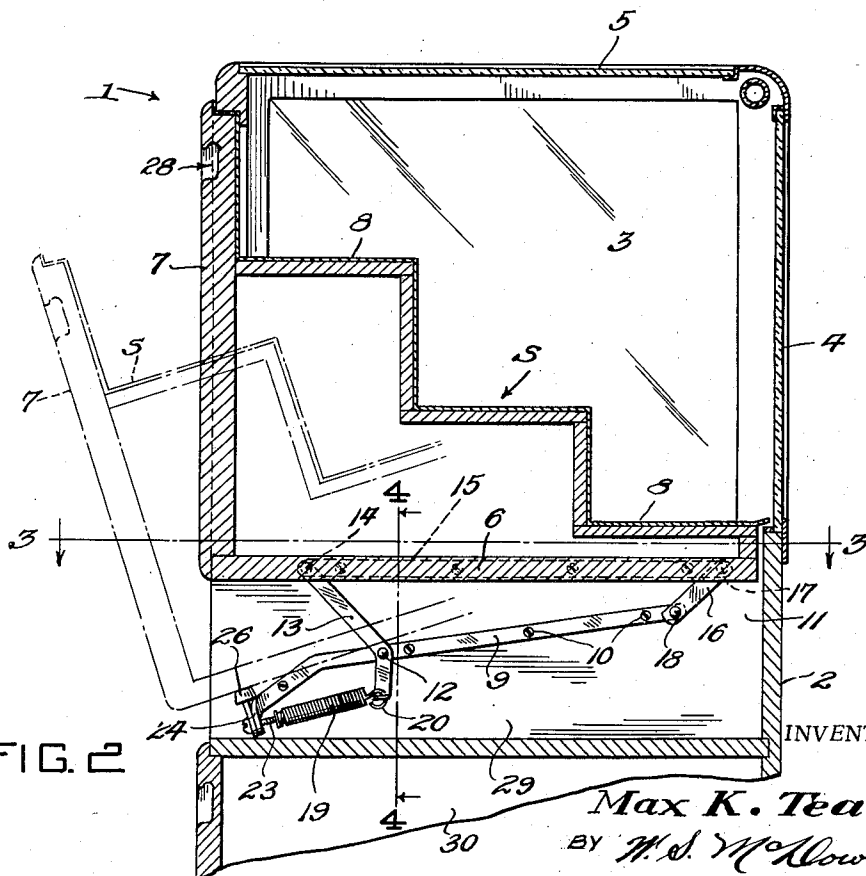


FIG. 2

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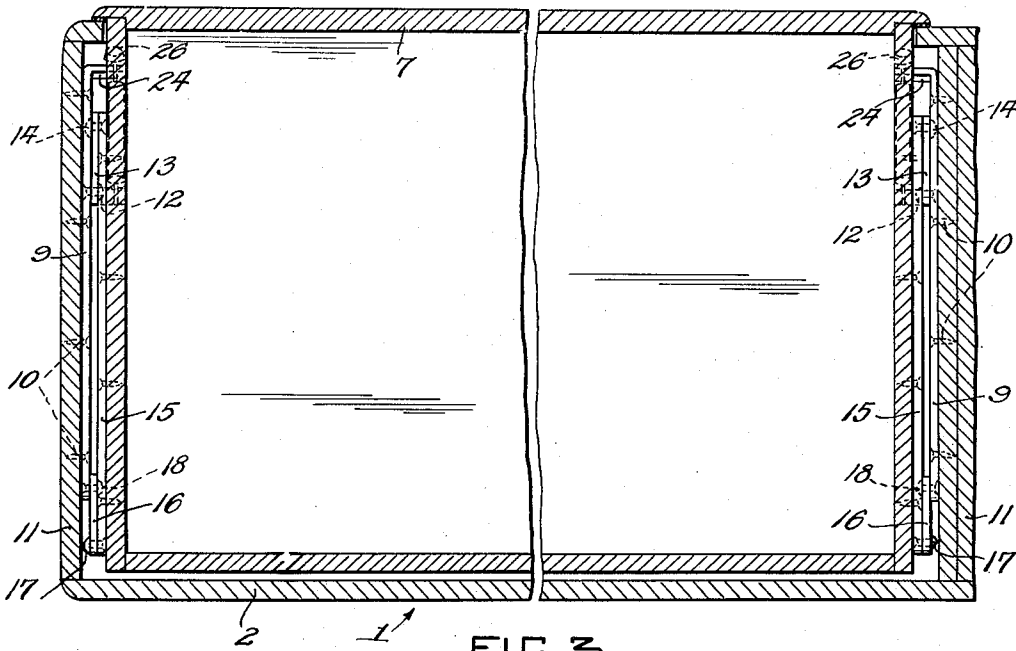
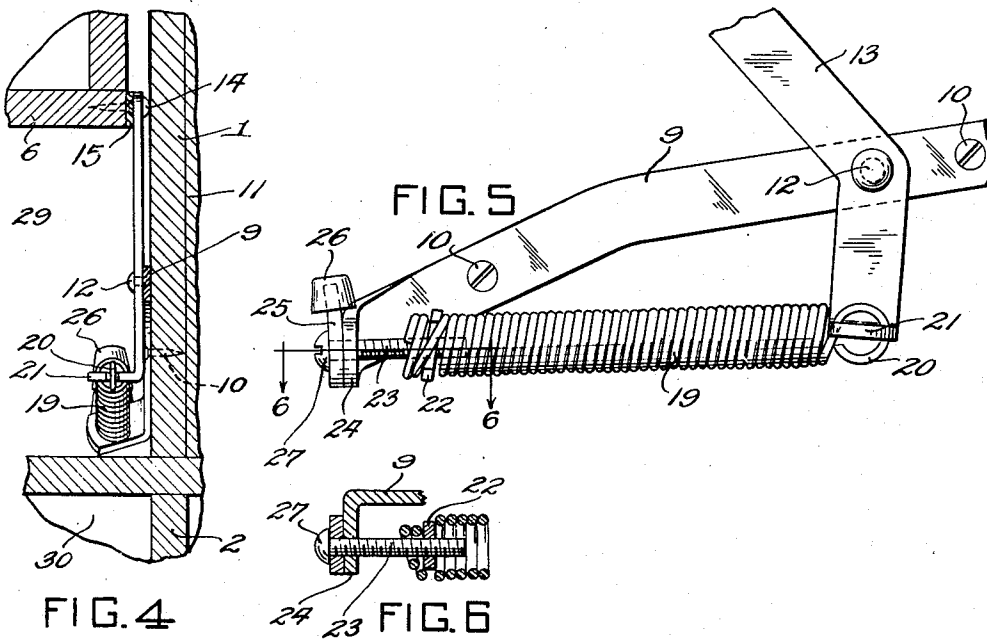
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UNITED STATES PATENT OFFICE

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TILTABLE MERCHANDISE SUPPORTING
MEANS FOR STORE-EMPLOYED DIS-
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4 Claims. (Cl. 312-136)

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This invention relates to improvements in merchandise display cases, and has particular reference to an improved tiltable shelf structure for use in such cases and on which merchandise is supported for display and vending purposes.

In display or show case construction, it is common to provide sliding or hinged doors at the rear thereof which, when opened, enable a store attendant to reach within the interior of the case and remove therefrom particular articles of merchandise which a patron may desire to inspect or purchase. With such conventional show case construction, wherein the merchandise-supporting shelf structure is stationary, it is often very difficult for the store attendant to reach into the case and remove therefrom merchandise disposed on the shelf structure in the forward part of the case. For example, in the merchandising of cigars, it is a common practice to place boxes containing the cigars on a stationary shelf structure in which the boxes are arranged in tiers, with a front row of boxes in the bottom or lower part of the case and succeeding rows of boxes arranged in successively higher elevations on the shelf structure toward the back of the case. Store attendants are often required to reach into such a show case from the rear thereof and select boxes or cigars disposed in the front of the case, an operation which is quite often difficult to effect by an attendant reaching into the case from the open back thereof.

Accordingly, it is an object of the present invention to provide in a display case of this character a tiltable shelf structure on which the articles of merchandise are arranged, so that the attendant, by rocking the shelf structure about a tilting axis provided therefor, will cause said structure to swing downwardly and rearwardly, so that all portions of the shelf structure will be disposed within the convenient reach of the attendant.

It is another object of the invention to form the shelf structure with a rear wall, which constitutes the back closure of the case in which the shelf structure is mounted.

It is another object of the invention to provide pivotally movable supports for the tiltable shelf structure which are under the influence of counterbalancing springs, enabling the shelf structure to be easily moved between its positions of merchandise display and removal.

With these and other objects in view which will appear as the description proceeds, the invention consists in the novel features of construction, combinations of elements and arrangements

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of parts, hereinafter more fully described and pointed out in the appended claims.

In the accompanying drawings:

Fig. 1 is a front elevational view of a show case constructed in accordance with the present invention;

Fig. 2 is a vertical transverse sectional view taken on the plane indicated by the line 2-2 of Fig. 1;

Fig. 3 is a horizontal sectional view on the plane disclosed by the line 3-3 of Fig. 2;

Fig. 4 is a vertical transverse sectional view on the line 4-4 of Fig. 2;

Fig. 5 is a fragmentary perspective view of one of the spring-controlled pivot arms used by the present invention, setting forth the mounting for said arm, the spring means associated therewith and the cushioning stop for arresting descent of the shelf structure of the case;

Fig. 6 is a detail horizontal sectional view on the line 6-6 of Fig. 5.

Referring to the drawings, the display case, indicated at 1, comprises a base 2 having formed in the upper part thereof a merchandise receiving and displaying compartment 3, the latter being provided with glazed front and top walls 4 and 5 respectively.

Positioned in the compartment 3 is a tiltable merchandise-supporting shelf structure S which in this instance comprises a horizontal base 6 which has rigidly joined therewith for unitary movement a back 7, the latter normally closing an access opening provided in the rear of the compartment 3. Mounted on the base 6 and its associated back 7 are stepped merchandise-supporting shelves 8, on which various articles of merchandise, not shown, may be positioned for display purposes.

In order that the shelf structure may be tilted rearwardly from the full line position illustrated in Fig. 2 to the broken line position, the interior of the display case, below the base 6 of the shelf structure, is provided with a pair of metallic straps 9 which are secured by means of screws or other equivalent fastening elements 10 to the vertical side walls 11 of the case.

Pivotally mounted as at 12 on each of the straps 9 is a pivotally movable supporting arm 13 adapted for oscillation in a vertical plane at one side of the shelf structure, as shown in Fig. 3. The upper end of each of the arms 13 is pivotally secured as at 14 to one end of a metallic reinforcing strip 15, one of these strips being secured to each of the end edge faces of the base member 6 of the shelf structure. Also, links,

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shown at 16, have their upper ends pivotally joined as at 17 with the forward ends of the base strips 15, while the lower ends of the links 16 are pivotally secured as at 18 to the forward ends of the metallic strap members 9. The arms 13 and the links 16 thus serve to movably support the shelf structure and to provide for its swinging movement about the axis of pivotal union 12 between the arms 13 and the straps 9.

To facilitate this swinging movement, particularly when the shelf structure is weighted with various articles of merchandise, I employ counterbalancing coil springs at each side of the shelf structure, as indicated by the numeral 19. Each of these springs has its forward end provided with an eye 20 which is engaged with a laterally directed foot 21 provided on the lower end of each of the arms 13. The opposite or rear end of each spring is engaged with an adjustable washer 22 threaded on the shank of a screw 23, the end of the spring being firmly attached to said washer. Each of the screws 23 is carried by a laterally directed ear 24 formed on the rear end of each of the straps 9. Each ear also carries a stop 25 provided with a rubber button 26 against which the lower surface of the shelf structure base strikes when the shelf structure is depressed to assume the lowered position indicated by broken lines in Fig. 2.

Each stop 25 and ear 24 are formed with aligned openings for the reception of the shank of a screw 23. Each of the screws is provided with an enlarged headed end 27, preventing the screw from being drawn through the openings in the members 24 and 25.

The design of the pivotal supporting arms 13 and their points of connection with the shelf structure, the display case body and the springs 19 are such as to cause these parts of the apparatus to function automatically in positively maintaining the shelf structure in its normal position of merchandise display and to require but slight application of force to the shelf structure in swinging the same to and from its normal display position, even though the shelf structure may be heavily loaded with merchandise. The mechanism is mechanically simple, inexpensive to produce and is not apt to require undue mechanical attention in maintaining the same for prolonged periods of time in proper working order. The back 7 advantageously may be formed with finger-receiving openings 28 in actuating the shelf structure in providing access to or closing the compartment 3. Below the base member 6 of the tilting shelf structure, the bottom of the display case may be provided with suitable compartments 29 and 30 for the storage of merchandise or to receive bags or other containers.

I claim:

1. In a merchandise display case; a cabinet having an internal merchandise-receiving compartment; a tiltable merchandise-supporting shelf structure movably positioned in said compartment, said structure embodying a rear wall normally closing an access opening in the back of said compartment; supporting means providing for bodily tilting movement of said shelf structure from a first position, in which the shelf structure is disposed entirely within the confines

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of said compartment with its back wall closing said access opening, to a second position wherein the shelf structure is angularly tilted and its back wall spaced rearwardly from said cabinet to provide for the removal of merchandise contained on said shelf structure through said opening; said supporting means including at each side of said shelf structure, and at the bottom thereof, a rearwardly disposed lever arm and a forwardly disposed link, the latter being shorter than said arm and arranged in upwardly diverging relationship therewith; means for pivotally joining said lever arm and link contiguous to their lower ends with said cabinet and their upper ends to said shelf structure; and counterbalancing spring means for said shelf structure connected with said cabinet and said lever arm, the normally upwardly divergent arrangement of said lever arms and links serving upon rearward tilting movement of said shelf structure to elevate the forward part thereof above the horizontal plane normally occupied thereby, and to lower correspondingly the rear part of said shelf structure below said plane, and with the back wall of said structure in angularly spaced relation from the vertical plane of the back of said cabinet to provide for the introduction or removal of articles into or from said display case.

2. A mounting appliance for the support of oscillatory bodies, comprising: an attachment bracket; a lever arm pivotally connected intermediate of its length to an intermediate portion of said bracket; a link having its lower end pivoted to one end of said bracket in spaced relation from said lever arm; means pivotally uniting the upper ends of said arm and link in substantially a common horizontal plane with an associated body and with the arm and link disposed relatively in upwardly diverging relation; said lever arm below its pivotal connection with said bracket including a crank extension; and a coil spring connected at one end with said extension and at its opposite end with said bracket, said spring being expanded upon oscillation of said body from its normal position of balance to exert a counterbalancing influence thereon.

3. A mounting appliance as set forth in claim 2, and wherein the same is further characterized by providing the end of said bracket opposite that carrying said link with a stop device for limiting the extent of oscillation of said body in a direction expanding said spring.

4. A mounting appliance as defined in claim 2, and wherein threaded means are provided in uniting the coil spring with said bracket to adjustably control tension exerted thereby.

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